

Application No. 09/927,441

Response dated: November 24, 2004

### REMARKS/ARGUMENTS

Claims 1-17 were previously pending in the present application. New claim 18 has been added, and claims 1-18 are currently pending. Claims 1, 7, and 14 are independent claims, and the remaining claims depend, directly or indirectly, from claims 1, 7, and 14. Independent claim 14 has been amended to include subject matter analogous to subject matter in independent claim 1.

The Specification has been amended to reference a serial number of a related patent application.

Claims 1-17 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent Number 5,883,735, issued to Sugiyama et al. ("Sugiyama").

#### Claim 1.

Claim 1 recites:

[a] method for communicating control information between a line unit and a terminal unit in an optical communication system comprising the steps of:

transmitting, from said terminal, said control information on a selected optical fiber;

receiving and decoding at least some of said control information at a first control unit of said line unit; and

sending said control information from said first control unit to a second control unit within said line unit, whereupon said second control unit decodes said control information and performs a command based on said control information.

The Action cites Sugiyama at Figure 13 and columns 3 and 4. In particular, with regard to the "sending" element of claim 1, the Action states that Sugiyama teaches "sending control information from first supervisory unit 23 to a second supervisory unit 23' within said line unit 11, which is inherently that the second supervisory unit 23' decodes said control information and performs a command based on said control information from the first supervisory unit 23."

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Applicant, however, respectfully disagrees because Sugiyama fails to teach the interaction between the control units as recited in claim 1. In particular, Sugiyama fails to teach "sending said control information from said first control unit to a second control unit". Furthermore, Sugiyama fails to teach "said second control unit decodes said control information and performs a command based on said control information." Instead, Sugiyama teaches away from that claim element. Sugiyama, at column 4, lines 35-39, describes the processing of command signals CM by the supervisory unit 23 and states:

The supervisory unit 23 decodes instructions which are included in the command signal CM from an end office located at one end of the optical transmission line 12, and applies a response signal RS to the drive control unit 24 in response to these decoded instructions.

In other words, supervisory unit 23 receives a command signal CM, decodes instructions, and drives a response signal without "sending said control information from said first control unit to a second control unit". Because Sugiyama fails to teach the "sending" step, it cannot teach "said second control unit decodes said control information and performs a command based on said control information". Instead, Sugiyama teaches that when the command signal is received, the supervisory unit 23 decodes instructions and applies a response signal without sending control information to the other supervisory unit 23'. In particular, Sugiyama teaches that the supervisory unit 23 utilizes the local drive control unit 24, as opposed to the drive control unit 24' associated with the other supervisory unit 23', so there is no motivation in Sugiyama to send command signals CM to the other supervisory unit 23'. As a result, there is no teaching of control information being sent between control units 23 and 23'.

Figure 14 and column 4, line 46 through column 5, line 5, offer further insight into the teaching of Sugiyama. For example, it is clear from Figure 14 that the command signal CM is received from the transmission line 12 by the photodiode PD 35 and provided to the supervisory unit 23. Figure 14 illustrates the command signal CM between the filter 37 and the supervisory unit 23. Figure 14 also illustrates the return signal RS being transmitted from the drive control unit 24 to the laser diode LD 33, which transmits onto the transmission line 12 via the wavelength division multiplexer WDM 32. The return signal RS is also illustrated between the drive control unit 24 and the laser diode LD 33.

Furthermore, Figure 14 illustrates that the other supervisory unit 23' receives a different control signal

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CM' and applies its own return signal RS' on a separate transmission line 12' in a manner analogous to that described above. Although Figure 14 illustrates a connection between the supervisory units 23 and 23', it fails to show sending control signals CM and CM' between the supervisory units 23 and 23'. In contrast, Figure 14 shows, via the paths and processing of the control signals CM and CM' and the resultant return signals RS and RS', that the control signals CM and CM' are not sent between supervisory units 23 and 23'.

Sugiyama states at column 5, lines 11-15, "... in response to the command signal CM' transmitted from the lower right part of the drawing, the above-noted response signal RS is output ...". However, there is no further discussion of the command signal and no teaching that command signals are sent between supervisory units 23 and 23'. While information may be exchanged through a connection between the supervisory units 23 and 23', Sugiyama fails to teach "sending said control information from said first control unit to a second control unit" and, because Sugiyama fails to teach the "sending" step, it cannot teach "said second control unit decodes said control information and performs a command based on said control information". Furthermore, Sugiyama teaches away from sending and decoding as recited in claim 1 because Sugiyama teaches processing the command signals (e.g., CM) by the receiving supervisory unit (e.g., 23) and associated components (e.g., 24) without sending the command signals (e.g., CM) to the other supervisory unit (e.g., 23'). See, for example, Sugiyama at column 4, line 35 through column 5, line 5, and Figure 14.

Therefore, for the reasons set forth above, Applicant submits that claim 1 is allowable over the cited art. Furthermore, claims 2-7 depend, directly or indirectly, from claim 1. Therefore, for at least the reasons set forth with respect to claim 1, Applicant submits that claims 2-7 are allowable over the cited art.

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Claim 7.

Claim 7 recites:

A method for reliably transmitting control information between a line unit and a terminal unit in an optical communication system comprising the steps of:

providing a plurality of communication paths between said line unit and said terminal unit;

selecting one of said plurality of communication paths between said line unit and said terminal unit for use in transmitting said control information;

transmitting said control information using said selected path until a predetermined fault characteristic is detected; and

selecting another of said plurality of communication paths for transmitting said control information after said predetermined fault characteristic is detected.

The Action cites Sugiyama at column 8, lines 9-28. In particular, with regard to the "selecting" element of claim 7, the Action states that Sugiyama teaches using path "12" for transmitting command signal CM' . . . after said predetermined fault characteristic is detected."

Applicant, however, respectfully disagrees. Claim 7 recites "transmitting control information between a line unit and a terminal unit" and "selecting another of said plurality of communications paths for transmitting said control information after said predetermined fault characteristic is detected". While Sugiyama discloses transmitting command signals CM over another communications path when a fault is detected, Sugiyama requires a different terminal unit to do so. In other words, with reference to Sugiyama at Figure 13, when end office B is transmitting to end office A and a fault is detected (marked as "x" on communications path 12), end office B cannot select another communications path for sending command signals. Instead, end office A must begin sending command signals CM in search of the fault. See, for example, Sugiyama at column 3, lines 48-57. As a result, and in contrast to the claimed invention, Sugiyama fails to teach "transmitting control information between a line unit and a terminal

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unit” and “selecting another of said plurality of communications paths for transmitting said control information after said predetermined fault characteristic is detected”. Instead, Sugiyama teaches selecting another communications path and selecting a second terminal unit for transmitting command signals. The claimed invention allows for transmitting control information from the same terminal unit on another communications path after the fault characteristic is detected. *See*, for example, the present application at Figure 5, in which redundant fiber pairs (Fiber Pair 1 and Fiber Pair 2) are shown. In that embodiment, if a fault is detected in Fiber Pair 1, control information can be transmitted from the same terminal unit using Fiber Pair 2. This distinction is further clarified in new dependent claim 18.

Therefore, for the reasons set forth above, Applicant submits that claim 7 is allowable over the cited art. Furthermore, claims 8-13 and 18 depend, directly or indirectly, from claim 7. Therefore, for at least the reasons set forth with respect to claim 7, Applicant submits that claims 8-13 and 18 are allowable over the cited art.

Claim 14.

Claim 14 has been amended to include subject matter analogous to the “receiving” and “sending” elements from claim 1. Therefore, for at least the reasons set forth with respect to claim 1, Applicant submits that claim 14 is allowable over the cited references. Furthermore, claims 15-17 depend, directly or indirectly, from claim 14. Therefore, for at least the reasons set forth with respect to claim 14, Applicant submits that claims 15-17 are allowable over the cited art.

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Conclusion.

Applicant submits that the application, as amended, is in condition for allowance. If the Examiner has any questions pertaining to this Amendment or to the subject application in general, the Examiner is encouraged to contact the undersigned.

Applicant believes that no fees are due with this Response. However, in the event fees are due with this Response, the Commissioner is hereby authorized to debit such fees from Charge Account Number 50-3198, in the name of Dickie, McCamey & Chilcote.

Respectfully submitted,

  
Darren E. Wolf  
Registration No. 16,310  
412-392-5681